Title (en)
Piston cooling system

Title (de)
Kolbenkühlsystem

Title (fr)
Système de refroidissement de piston

Publication
EP 2772637 A1 20140903 (EN)

Application
EP 14156853 A 20140226

Priority
• JP 2013039914 A 20130228
• JP 2013267621 A 20131225

Abstract (en)
A piston cooling system includes: a nozzle pipe portion which communicates with an oil passage which is provided in an internal combustion engine and which extends towards an interior of a cylinder bore; and a flow path forming member which is fixed to a distal end portion of the nozzle pipe portion and in which a plurality of oil jetting paths are formed, wherein: the distal end portion comprises an expanded pipe portion where the nozzle pipe portion is expanded and the flow path forming member is fittingly inserted into the expanded pipe portion; the flow path forming member has a distal end face which is exposed to an exterior portion at a distal end side of the expanded pipe portion; and the flow path forming member is locked in the expanded pipe portion by deforming a distal end edge of the expanded pipe portion.

IPC 8 full level
F02F 3/22 (2006.01); **F01P 3/08** (2006.01)

CPC (source: EP US)
F01P 3/08 (2013.01 - EP US); **F02F 3/22** (2013.01 - EP US)

Citation (applicant)
JP 2004124938 A 20040422 - BONTAZ CENTRE SA

Citation (search report)
• [XI] US 5915345 A 19990629 - KLING JUERGEN [DE], et al
• [I] US 2002014543 A1 20020207 - NESS FRIEDRICH [DE]
• [X] US 2008017139 A1 20080124 - ISSLER WOLFGANG [DE]

Designated contracting state (EPC)
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)
BA ME

DOCDB simple family (publication)
EP 2772637 A1 20140903; **EP 2772637 B1 20160224**; BR 102014004686 A2 20141209; JP 2014194213 A 20141009; JP 6002657 B2 20161005; US 2014238317 A1 20140828; US 8967093 B2 20150303

DOCDB simple family (application)
EP 14156853 A 20140226; BR 102014004686 A 20140227; JP 2013267621 A 20131225; US 201414187652 A 20140224